

## ABSTRACT OF THE DISCLOSURE

Five novel DNA and protein sequences have been determined for the BRCA2 gene, as have been ten polymorphic sites and their rates of occurrence in the 5 normal alleles of BRCA2. The sequences BRCA2<sup>(omi 1-5)</sup> and the ten polymorphic sites will provide greater accuracy and reliability for genetic testing. One skilled in the art will be better able to avoid misinterpretations of changes in the gene and/or protein sequence, determine the presence of a normal sequence, and of mutations of BRCA2. This invention is also related to a method of performing gene therapy 10 with BRCA2<sup>(omi 1-5)</sup> coding sequences or fragments thereof. This invention is further related to protein therapy with BRCA2<sup>(omi 1-5)</sup> proteins or their functional equivalents.